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horizontal. Had the locomotive and tender been running at the rate of $r=60$ miles an hour, how many tons would the pressure on the bridge have been?

*** Solutions of these problems should be sent to B. F. Finkel not later than April 10.

AVERAGE AND PROBABILITY.

91. Proposed by G. B. M. ZERR, A. M., Ph. D., Professor of Mathematics and Science, Chester High School, Chester, Pa.

Six points A, B, C, D, E, F are taken at random on the surface of a sphere. Find the chance that the plane through A, B, C intersects the plane through D, E, F within the sphere.

92. Proposed by F. P. MATZ, M. Sc., Ph. D., Professor of Mathematics and Astronomy in Irving College, Mechanicsburg, Pa.

A circular field, radius r , is divided into four *equal* parts, by concentric circles and three concentric rings. From the center of this field are fired *at random*, and with such a velocity as not to produce a range greater than the radius of the field, $m=1000$ projectiles of the *same* kind. How many projectiles should have fallen into each one of these four equal parts of the field?

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EDITORIALS.

Mr. W. D. Cairns has been appointed to an instructorship in mathematics in Oberlin College.

A fac-simile reprint of Legendre's *Theorie des Numbers* has lately been issued by A. Hermann, of Paris.

Among the lecturers before the students of the College for Women of the Western Reserve University, is Prof. E. S. Loomis, Teacher of Mathematics in the West High School of Cleveland, Ohio. Prof. Loomis's lectures are on *Fundamentals in the Teaching of Arithmetic, and Essentials in Teaching Algebra*.

BOOKS AND PERIODICALS.

Elements of Precise Surveying and Geodesy. By Mansfield Merriman, Professor of Civil Engineering in Lehigh University. 8vo. Cloth, 261 pages. Price, \$2.50. New York: John Wiley & Sons.

The work begins with an elementary treatment of the method of least squares, developing the theory of the method in such an elegant and lucid way as to be clearly comprehended by a beginner. Many examples are solved to illustrate the various principles as they are developed. One not familiar with the Law of Probability of Error, and the Method of Least Squares and desiring to get a working knowledge of the subject needs this book. Chapter II treats of Precise Plane Triangulation in which is applied the Method of Least Squares for the correction of measured magnitudes; Chapter III treats of Base